Claims

1. A method for producing an LED light source, particularly comprising mixed-color LEDs, wherein at least a portion of primary radiation emitted by a chip is transformed by luminescence conversion,
comprising the steps of:

- preparing a chip comprising a front-side electrical contact in the form of an electrical contact surface,
- thickening said front-side electrical contact by applying an electrically conductive material to said electrical contact surface,
- coating said chip with a luminescence conversion material.

2. The method as described in claim 1,
wherein said luminescence conversion material comprises a radioparent matrix material that is replaced with a phosphor.

3. The method as described in claim 2,
wherein said radioparent matrix material comprises SiO_2 and/or Al_2O_3.

4. The method as described in claim 2 or 3,
wherein said radioparent matrix material comprises an oxide and/or a nitride whose refractive index is between 1.5 and 3.4.

5. The method as described in one of claims 1 to 4,
wherein electrical terminals that are coated with luminescence conversion material are then exposed by thinning the luminescence conversion material.

6. The method as described in one of claims 1 to 5,
wherein the layer of luminescence conversion material is evened by thinning.

7. The method as described in one of claims 1 to 6,
wherein monitoring of the color coordinates (CIE chromaticity diagram) of the LED light source is subsequently performed.

8. The method as described in one of claims 1 to 7,
wherein the thickness of the layer of luminescence conversion material is adjusted by thinning it.

9. The method as described in claim 8,
wherein during said thinning, the color coordinates of the LED light source are adjusted over the thickness of the layer of luminescence conversion material by being monitored.

10. The method as described in one of claims 1 to 9,
wherein

- the chip emitting the primary radiation is disposed in a wafer composite with a multiplicity of additional similar chips,
- each of the method steps takes place simultaneously for the chips of the entire wafer composite,
- the chips are subsequently singulated into LED light sources.

11. The method as described in claim 10,
wherein before the chips are coated with luminescence conversion material, troughs are made along scribe lines between the individual chips, so that during the subsequent coating of the chips with luminescence conversion material said troughs are at least partially filled with luminescence conversion material.

12. The method as described in claim 10,
wherein before the chips are coated with luminescence conversion material,

- the entire wafer composite is mounted with the underside on a carrier,
- the chips are singulated from the wafer composite in such a way that they continue to be held together on said carrier,

- during the coating of the chips, the lateral sides of the singulated chips are at least partially coated with luminescence conversion material,
- the chips are subsequently singulated into LED light sources from their composite held together by said carrier and said luminescence conversion material.

13. The method as described in one of claims 10 to 12,
wherein before said chips are singulated into LED light sources their respective color coordinates and positions are determined and recorded, and after singulation the LED light sources are sorted on the basis of their color coordinates.

14. The method as described in one of claims 10 to 12,
wherein before the chips are singulated the following method steps are performed:

- determining and recording the respective color coordinates and positions of the LED light sources,
- dividing the wafer into regions containing LED light sources that have similar color coordinates,
- adjusting the regions containing LED light sources that have similar color coordinates to a specific set of color coordinates by regionally selective thinning of the luminescence conversion material in the individual regions, and
- monitoring the color coordinates of one of the LED light sources of the region concerned.